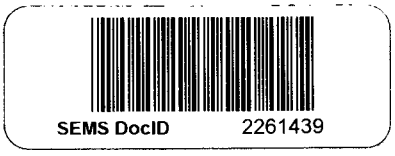
ORIGINAL
(Red)

Subject: Site Review Memorandum

From: Stephen D. Jarvela, OSC

To: File

Thru: Gregg Crystal, Chief
Eastern Response Section



On July 26, 1993 I asked the Region III Technical Assistance Team to prepare a draft Site Review Work Plan (SRWP) in anticipation of solicited comments on the "Shaffer Site File Review (6/20/93)" expected by August 27, 1993. September 23, 1993. The DRAFT SRWP (attached) has been prepared to collect sufficient data to accomplish and document the following; evaluate the status of the initial fund financed removal action remedy; assess and reconcile anomalies identified during the file review; and document and evaluate current site conditions, prepare and evaluate future actions.

In response to our file review EPA received the attached sets of comments from; Agency for Toxic Substances and Disease Registry (ATSDR); WV Department of Health (WVDOH); and the Concerned Citizens to Save Fayette County (CCSFC). All comments were reviewed and evaluated on there individual merit. Most comments or concerns have been incorporated into the draft SRWP, however, two concerns could not be supported by physical evidence or scientific study and therefore were not included in the SRWP (see the attached response to CCSFC). The following issue was not considered within the scope of this review and therefore remains unresolved:

Issue - THREE MILE RADIUS SAMPLING -- In 1990 EPA committed to conduct additional sampling within three miles of the Shaffer Site. To facilitate the concerns of the local citizens and fulfill its commitment, EPA requested that they identify all the sites within three miles that were of concern to them. The 8 off-site locations ultimately identified by the citizens were all within 1.5 miles of the site. All locations identified by the citizens, were sampled and the results documented in the 1990 report. However, the citizens continue to insist that EPA did not fulfill its commitment by grid sampling out to three miles. To date there has been no new evidence brought forward, or information in the files that supports the need for additional off-site sampling out to a three mile radius.

This issue is not within the scope of the SRWP. The Shaffer Site SRWP is intended to collect sufficient data for EPA to review and evaluate the integrity of the initial fund financed removal remedy, investigate the anomalies identified in the 1993 file review and to assess <u>on-site</u> areas outside the initial extent of contamination, documenting current site conditions.

ORIGINAL (Red)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

SUBJECT: Shaffer Electric Site
ERT Review

DATE: 9-27-93

FROM: Stephen D. Jarvela, OSC
Superfund Removal Branch (3HW30)

TO: Dr. Joe Lafornara
Environmental Response Team (MS101)

As discussed I am forwarding the following information on the Shaffer Electric Site:

Site File Data Review - TAT 06-16-93
Comments on data review -
Draft Site Review Work Plan (SRWP) - 9-20-93
Response to comments on data review -
ATSDR Petitioned Public Health Assessment - 6-1-93

I have been asked by the Region to conduct a review of the site in response to the continuing concern expressed by the Concerned Citizens to Save Fayette County, Inc. (CCSFC) and in response to some of the recommendations in the ATSDR petitioned public health assessment.

Because of the history of this site, I am requesting ERT assistance in review of the draft work plan, oversight of its implementation, evaluation of the SRWP data, and consultation on recommendations for future action(s). I have tentatively scheduled site activity for 10/18-29/93, as an optimistic goal. If you have any questions or require additional information please contact me at (215)597-7915 or FAX# (215)597-8138.

The Region III site specific account identifier is "D8". All effort supporting this request should be charged to the appropriate account number.

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Agency for Toxic Substances
and Disease Registry
Atlanta GA 30333

ORIGINAL

SEP 01 1993

Mr. Stephen Jarvela
Superfund Removal Branch (3HW30)
EPA Region III
841 Chestnut Street
Philadelphia, Pennsylvania 19170

Dear Mr. Jarvela:

The Agency for Toxic Substances and Disease Registry (ATSDR) has received a copy of your June 28, 1993, letter (with enclosures) that was sent to Mr. Charles Walters, ATSDR Regional Representative, regarding Shaffer Electric Site (also known as Shaffer Equipment Company). In your letter it stated that the Environmental Protection Agency (EPA) would "...not make any decision or initiate any action on the site access or sampling plan issues prior to consultation with ATSDR..." and you requested that "...ATSDR and all other parties review the attached maps and charts and thereafter provide any facts, data, or other information that may aid EPA in its review." In accordance with this request, ATSDR has reviewed the maps and data provided.

All of the data, provided with your letter, was used in the development of the Shaffer Equipment Company Petitioned Public Health Assessment. Therefore, the recommendations in the public health assessment have not changed. In addition, ATSDR has determined that, to date, we have no additional site-related PCB data other than that which has been reported in our public health assessment.

In regard to the "site access issue," ATSDR maintains that the site (the Shaffer Equipment Company property and any adjacent contaminated properties) should be fenced to restrict site access, as indicated in the Shaffer Equipment Company Petitioned Public Health Assessment. The data indicates elevated concentrations of PCBs (up to 840 mg/kg) in on-site surface soil and subsurface soil concentrations ranging up to 1020 mg/kg. Additionally, the entire site does not appear to have been sampled by the grid method or by any other method that would show, with a high degree of confidence, that no other hot spots exist.

Concerning "sampling plan issues," on-site surface soil sampling should be considered to determine appropriate future uses of the site. Water samples should be collected and analyzed as indicated in the public health assessment.

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ATSDR believes that, under the current site conditions, the site should be fenced and restricted from any industrial/commercial or residential use. With complete surface soil characterization and dissociation of workers from areas of elevated contamination (contaminant levels which are above public health concern), the site could be used for industrial/commercial activities. However, this would exclude any uses that require on-site soil excavation unless subsurface soil sampling is conducted and appropriate actions are taken to protect public health. ATSDR recommends that the site be restricted from any future residential uses until cleanup of all contaminated soil is conducted.

ATSDR would like to thank you for the opportunity to review the data assembled by your office. ATSDR will continue to be available for consultation if any other questions or public health issues arise. If you have any questions, please contact Mr. Jeff Church, Environmental Health Scientist, of my staff at 404/639-0600.

Sincerely yours,

Robert C. Williams, P.E., DEE
Director
Division of Health Assessment
and Consultation

CONCERNED CITIZENS TO SAVE FAYETTE COUNTY, INC. 1985

P. O. Box 75 - Minden, WV 25879 - (304) 469-6247

August 24, 1993

Stephen D. Jarvela, OSC
Superfund Removal Branch (3HW30)
EPA Region III
841 Chestnut Street
Philadelphia, PA 19170

Dear Mr. Jarvela,

I have transposed to the best of my knowledge the sampling points that Lucian Randall and myself took on July 14, 1991. As you are aware of Virginia Tech, the STEP Project, analyzed the samples for the group. Due to the fact that some samples were broken (samples 3,6,9, & 10 - please note the descriptive analysis) the STEP Lab did not report analyzing them. Also, soil sample #14 is not listed as being analyzed. Samples 21 & 22 are unknown for they represent samples 3, 6, 9, 10, and 14 and we do not know which they represent.

The analysis of samples 1,2,4,5,7,8, 11,13,23 (Mr. Mansfield yard) and the tree bark samples of 24,25, & 26 do in fact correspond to the descriptive analysis which is included. Thus, I hope that you will be able to discern the locations that we did sample.

In relating to our requests for new sampling areas of the Shaffer Site and Minden we request that the three mile radius study be implemented that was agreed to by the EPA, Senator Rockefeller, and Concerned Citizens in 1989. However, specific areas of interest are the areas that have diagonal lines on maps 9A and 9B, the "pit" area, the Shaffer building itself (which the EPA tested under Bob Caron which in fact yielded levels of 4,000 ppm), tree core sampling, samples to be taken of the residential yards in the flood plain of the township of Minden (the area of Mr. Lewis, Mrs. Buckland, and Margaret Jarrell's yards) the sediment of Minden mine #3, and samples of Arbuckle sediment and water.

The samples taken on site should be of one, two, and three foot depths and the samples of the residential yards should be eight to fourteen inches deep. We are requesting that a "split-sampling" techniques be utilized, so that Concerned Citizens can take samples from the same locations that the EPA samples and that the EPA pay the cost of a certified independent lab. We feel that this is an equitable request.

We hope that our input will help to achieve economic and social justice for the resident of Minden.

Larry Rose

CC: Joe Shock, State Health Department
Senator Rockefeller
Senator Byrd
Congressman Rahall
Senator Holliday
Steering Committee of Concerned Citizens

"Eight Years Struggling for Economic & Social Justice: Fighting to insure Fayette County a clean, safe, and healthy environment."

ORIGINAL (Red)

July 14, 1991 Samples —
Rear End of Building Sampling (3) samples

(12) 14' across from fence - facing the open Road 23' below the 2nd telephone pole next to the fence = 8" deep

(13) 16' in ditch (drainage) from drainage pipe towards Arbuckle Creek 12" deep

~~(14)~~ 40' in ditch from drainage pipe towards Arbuckle Creek 12" deep. Omit

3 Tree Bark Samples #24, #25, #26

24) Big Maple - cut 2" into the Bark - directly Behind the Burnt Out

25) Directly across from 2nd Keep-out sign - Maple Tree

26) Poplar Tree - 10' across from Steel walk Bridge

Sample # 23 - Mr Mansfield yard - above site

-iptive Analyses of the July 14, 1991 Soil, Sediment, nd Tree Bark Samples taken at the Shaffer Site 1inden, WV.

Descriptive Analysis

Omit #'s 3, 6, 9, 10 and 14

#
15 samples - soil + sediment

(1) 10 feet up from Shed (along buem) towards Rear-end gate - 6" down

(2) Behind Burnt out Shed, along Burm - 6"-8" down

~~(3)~~ 2' Below Steel Beam - Sediment of Arbuckle Creek. Omit

(4) In front of Shed - EPA "RED Flag" - 6-8" deep

(5) Directly behind the 3 transformers 17' from the first Keep Out sign to the Burm of Arbuckle Creek

~~(6)~~ 13' directly across from the second Keep out sign - 6-8" deep Omit

(7) 15' across from 2nd Keep Out Sign to Burm → the 9' towards front of Building - 8" deep

(8) front of Building - 8' north of Telephone pole - 4' from wall 12" deep

~~(9)~~ front of Building - 14' north of telephone pole 8' from wall Omit

~~(10)~~ 7' from edge of building (front) completely down from the telephone pole Omit

(11) Sediment Sample 10' above Steel Cross Bridge towards Back of Shaffer Building & Rear Gate - sand bar (12" deep) and sediment

ORIGINAL (Red)

PESTICIDE RESIDUE RESEARCH LABORATORY
VA TECH
352 LITTON REAVES HALL
BLACKSBURG, VIRGINIA 24061-0309

ENTRY: 088

DATE: May 8, 1992

FOR: Wes Geertsema
STEHP Program
ADDRESS: Environmental Engineering
Norris Hall
Va Tech

DATE RECEIVED: October 13, 1991

DESCRIPTION OF SAMPLE: Soil and Tree Bark

DETERMINATIONS: ← Numbers correspond to our descriptive analysis

1.	Soil (#1)	.758 ppm	1260 PCB
2.	Soil (#2)	3.276 ppm	1260 PCB
3.	Soil (#4)	2.712 ppm	1260 PCB
4.	Soil (#5)	92.420 ppm	1260 PCB
5.	Soil (#7)	56.658 ppm	1260 PCB
6.	Soil (#8)	2.754 ppm	1260 PCB
7.	Soil (#11)	2.763 ppm	1260 PCB
8.	Soil (#12)	40.515 ppm	1248 and 1260 PCB
9.	Soil (#13)	166.164 ppm	1260 PCB
10.	Soil (#21)	0.490 ppm	1260 PCB - UNKNOWN
11.	Soil (#22)	34.307 ppm	1260 PCB - UNKNOWN
12.	Soil (#23)	1.093 ppm	1260 PCB MA Mansfield Yard
13.	Tree Bark (#24)	Less than 0.2 ppm PCB	
14.	Tree Bark (#25)	Less than 0.2 ppm PCB	
15.	Tree Bark (#26)	Less than 0.2 ppm PCB	

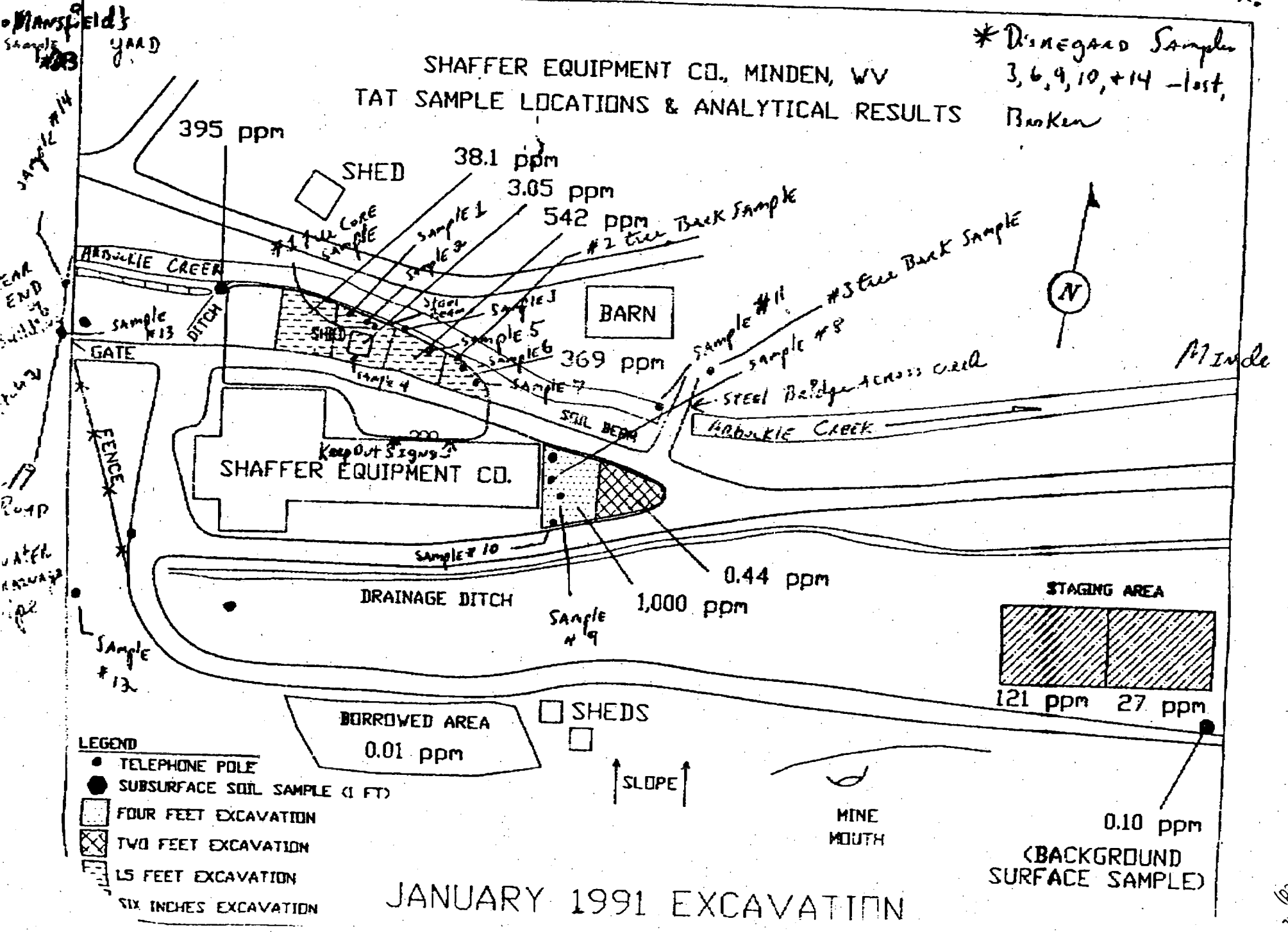
Either #3, 6, 9, 10, or 14.

(DAVID RUGGIERO LAB SPEC A)

PROFESSOR R.W. YOUNG, DIRECTOR

PESTICIDE RESIDUE RESEARCH LABORATORY

All Samples Taken on July 14, 1991. The samples that we took are indicated by Red Ink.



JANUARY 1991 EXCAVATION

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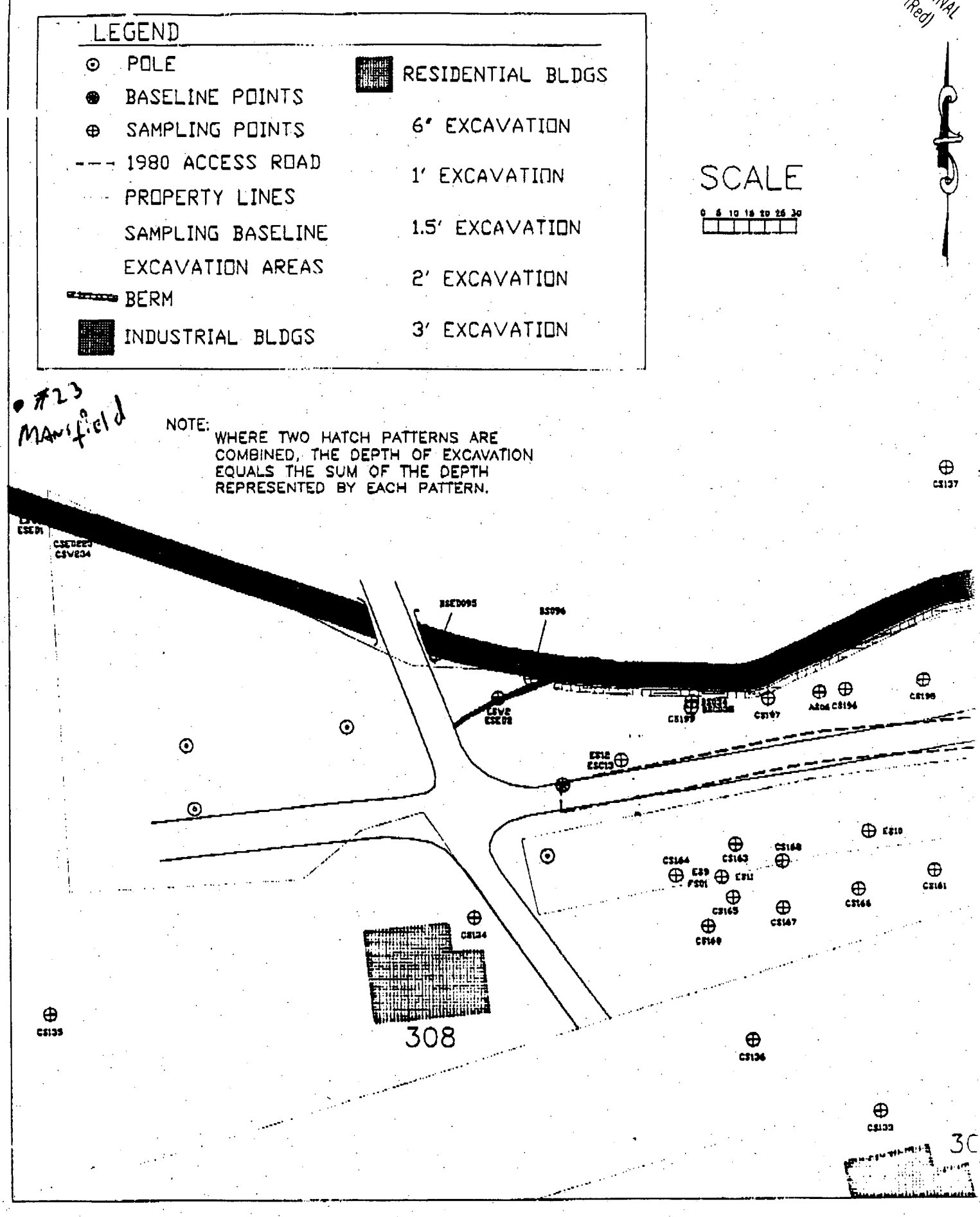
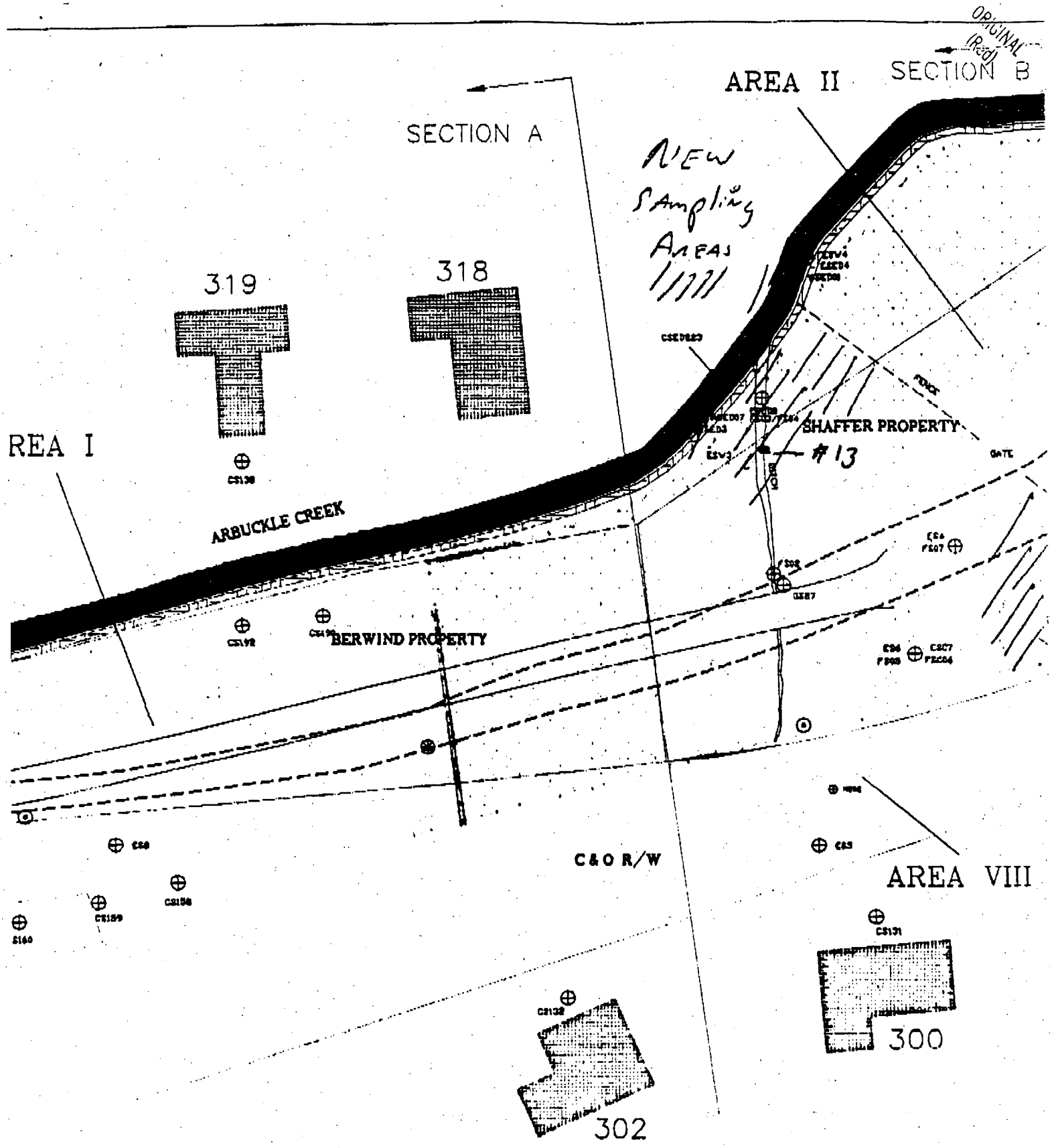




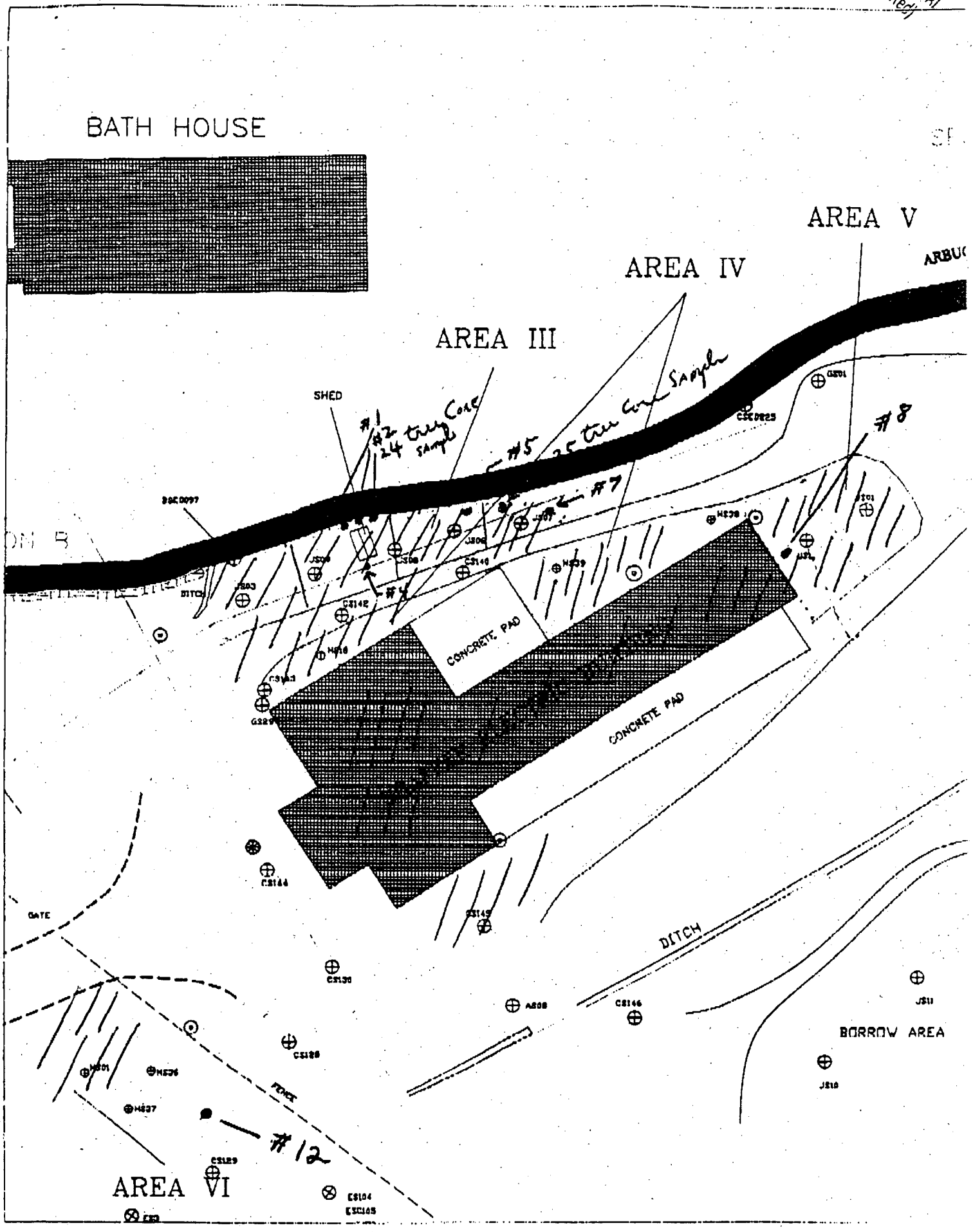
U.S. ENVIRONMENTAL PROTECTION AGENCY
TECHNICAL ASSISTANCE TEAM - REGION III
WESTON
MAJOR PROGRAMS DIVISION
DELRAN

CHECKED	(b) (4)	DATE
SUB. MGR.	(b) (4)	
SITE LEAD	(b) (4)	
DES	STEVE IANNELA	

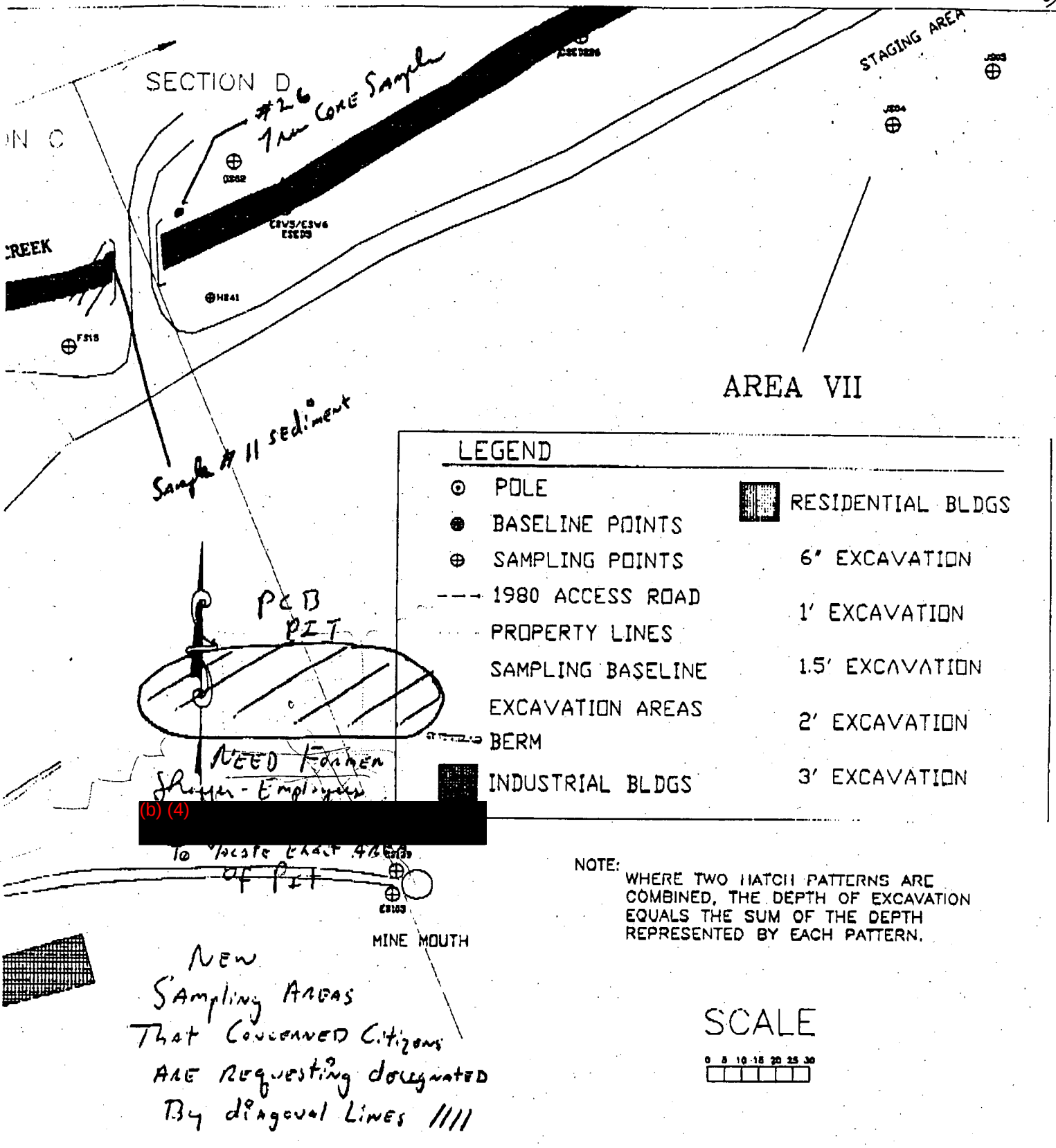
SHAFFER EQUIPMENT SITE

MAP # 8	SHEET # 4
DRAWN [redacted]	DATE 8/16/96
SCALE 1" = 40'	JOB # 1468

ORIGINAL (Red)



ORIGINAL (Red)



U.S. ENVIRONMENTAL PROTECTION AGENCY TECHNICAL ASSISTANCE TEAM – REGION III WESTON MAJOR PROGRAMS DIVISION DELRAN NEW JERSEY	CHECKED (b) (4)	DATE	SHAFFER EQUIPMENT SITE
	DES. ENG. (b) (4)		MAP# 8 SHEET# 8
	SITE LEAD (b) (4)		DRAWN [redacted] DATE 8/16/96
	STEVE IANNELLA		SCALE 1" = 40' PROJ# 4445

ORIGINAL (Red)

STATE OF WEST VIRGINIA
DEPARTMENT OF HEALTH AND HUMAN RESOURCES

Gaston Caperton
Governor

August 25, 1993

Stephen D. Jarvela, OSC
Superfund Removal Branch (3HW30)
EPA Region III
841 Chestnut Street
Philadelphia, PA 19170

This is to advise we endorse and support the recommendations contained in Larry Rose's August 24, 1993 communication concerning additional sampling of the Shaffer Site and Minden.

Sincerely,

Joseph P. Schock

Joseph P. Schock, M.P.H., P.E., Director
Office of Environmental Health Services

cc: Larry Rose

ORIGINAL (Red)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

(b) (4), M.P.H., P.E., Director
Office of Environmental Health Services
Department of Health and Human Services

Charleston. WV

Dear (b) (4)

Thank you for your comments on the Shaffer project data summary. To date I have received a total of three responses to the summary (attachment 1). As promised I have included a draft Site Review Work Plan (SRWP) attachment 2. Please review this document and forward any comments to me by October 12, 1993. Upon receipt of comments I will make any appropriate changes and then schedule site activities (tentatively 10/18-29/93).

In response to your comment that you endorse additional sampling, I have enclosed a copy of the draft Site Review Work Plan (SRWP). I am also including EPAs response (attachment 3) to the comments submitted by the Concerned Citizens to Save Fayette County, Inc. and ATSDR for your information.

Sincerely,

Stephen D. Jarvela,
On-Scene Coordinator

ORIGINAL (Red)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

Jeff Church
Agency for Toxic Substances and Disease Registry
DHAC/CHB
1600 Clifton Road N.E.
Atlanta, Ga 30333
E-32

Dear Jeff;

Thank you for your comments on the Shaffer project data summary. To date I have received a total of three responses to the summary (attachment 1). As promised I have included a draft Site Review Work Plan (SRWP) attachment 2. Please review this document and forward any comments to me by October 12, 1993. Upon receipt of comments I will make any appropriate changes and then schedule site activities (tentatively 10/18-29/93).

In response to your comment that the "site should be fenced to restrict access" EPA is taking that under advisement. The work plan is structured so that surface sample locations will help determine the perimeter of the area that requires restricted access. However, EPA is not restricting its choices of remedies to fencing. Remedies (e.g. soil cover, excavation, institutional barriers, fencing, etc.) will be considered as part of any option analysis resulting from the data collected during the activities outlined in the SRWP.

Your comment that the entire site has not been sampled by a grid method is noted. While there is considerable empirical data to suggest that some areas were not used by Shaffer Electric for PCB storage or salvage (nor contaminated by these past site activities), grid sampling has been included in the SRWP.

I am including EPAs response (attached) to the comments submitted by the Concerned Citizens to Save Fayette County, Inc (Larry Rose) for your information.

Sincerely,

Stephen D. Jarvela,
On-Scene Coordinator

ORIGINAL (Red)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

Concerned Citizens to Save Fayette County
C/O (b) (6)
Rt. 1, Box 666
Scarboro, WV 25917

Dear (b) (6) ;

Thank you for your timely comments to EPA's file review of the Shaffer Electric Site. To date I have received a total of three responses to the summary (attachment 1). As promised I have included a draft Site Review Work Plan (SRWP) attachment 2. Please review this document and forward any comments to me by October 12, 1993. At that time I will make any appropriate changes and then schedule site activities (tentatively 10/18-29/93).

The following comments are in response to your August 24, 1993 letter.

1. Extended Sampling to three mile radius -- In 1990 EPA conducted off site sampling of all the off-site locations identified by the citizens at that time. The results of that effort is documented in a report prepared by NUS Corp dated 6/29/90. The Agency feels that it has fulfilled its commitment to sample up to three miles by sampling those locations identified by the citizens at that time. Since then, no new evidence with regard to off site contamination has been brought to EPAs attention, nor information within the files (other than noted below), which supports the need to conduct further off-site investigation.

   This issue is not within the scope of the SRWP. The Shaffer Site SRWP is intended to collect sufficient data for EPA to evaluate the integrity of the initial fund financed removal remedy, investigate the anomalies identified in the 1993 file review and to assess on-site areas outside the initial extent of contamination, documenting current site conditions.

2. Split sampling and independent laboratory analysis -- This request has been incorporated into the SRWP which identifies over 200 sample locations. All samples will be analyzed using an amino-assay field method. Ten percent (10%) of the samples will be sent to a laboratory for validation. Sufficient volume of sample media will be collected in each sample, to provide for split samples of each of the samples to be validated, for analysis by and independent laboratory. I will be requesting that the West Virginia Division of Environmental Protection (WVDEP) as a neutral observer arrange for the independent analysis.

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3. Sampling to depth -- The SRWP includes sampling at 1 foot intervals to a depth of three feet at selected locations.

4. Investigation of the "PIT" -- The SRWP includes the sampling of the area suspected to be the "PIT". The location to be sampled will be identified by local residents.

5. Sampling of residential gardens -- The Agency for Toxic Substances and Disease Registry (ATSDR) petitioned public health assessment does not state or recommend the need for such sampling. Previous off-site sampling conducted in 1985 did not indicate any level of PCB contamination above the 50ppm action level at that time. However, soil samples collected in 1985 from residential property adjacent to Arbuckle Creek had unconfirmed PCB levels at or near 10ppm which is the action level being used for this review for unrestricted access. The OSC feels that there is sufficient reason to conduct off-site sampling downstream of the site along Arbuckle Creek and has included random sampling within the floodway of Arbuckle Creek in the SRWP.

6. Building -- EPA does not intend to conduct additional sampling of the interior of the shaffer electric building located on site. However the evaluation of the initial fund financed remedy will include a physical inspection of the integrity of that building.

7. Tree core samples -- On-site tree bark samples obtained by your organization and analyzed for PCBs were reported by the Virginia Polytechnic Institute and State University, as below detectable limits. There is some scientific literature which indicates that plant uptake of PCB is not likely, and that the only potential concern would be from surface contamination. Therefore, tree core samples would not be productive since there is no evidence of even surface contamination of tree bark. Soil and sediment sampling is the best indicator of potential exposure from the migration of contaminants from the Shaffer site. Tree core sampling has not been included in the SRWP.

8. Flood plain residential samples -- (see item #5)

9. Minden Mine #3 -- File records do not clearly identify the location of Minden Mine #3. Mine sediments were taken from the collapsed mine entrance (identified as mine #2), which is located on site. Those samples and did not show any significant levels of PCB contamination. EPA does not intend to take additional mine sediment samples, however, the SRWP does include additional sediments samples down stream of the mine drainage which should be sufficient to indicate any potential problem from runoff from this side of the site.

   There is no record of concern about PCB contamination in the two off-site Minden mines noted on the site location map (fig.

ORIGINAL (Red)

1, SRWP). Sampling these mines should be referred to the WVDEP as a separate and independent investigation.

10. Arbuckle Creek sediments -- Sediment sampling of Arbuckle creek has been incorporated into the SRWP.

I will be contacting you when the SRWP is finalized to advise you of our schedule for site activities. The current estimate for on-site activities is 10 - 12 days. To facilitate participation of CCSFC observers during all site operations, I will need the name and phone number of a primary and alternate point of contact (POC) for your organization. You can call me at (215)597-7915 or FAX the information to FAX# (215)597-8138. To avoid confusion I will coordinate with CCSFC through these individuals. At this time I would like to request that you or your POC help make arrangements for (b) (6) (b) (6) to locate the "Pit Area" as you have noted on the site map attached to your letter.

Sincerely,

Stephen D. Jarvela
On-Scene Coordinator

cc: Pam Hayes - WVDEP

ORIGINAL
(Red)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

(b) (6)
[redacted]
McQueen Law Offices
Suite 511, Kanawha Valley Building
P.O. Box 1831
Charleston, WV 25327

Dear Mr. (b) (6) [redacted];

The following is in response to comments received on the Shaffer project data summary. To date I have received a total of three responses to the summary (attachment 1). As promised I have included a draft Site Review Work Plan (SRWP) attachment 2. Please review this document and forward any comments to me by October 12, 1993. Upon receipt of comments I will make any appropriate changes and then schedule site activities (tentatively 10/18-29/93).

Thank you for your assistance on this project. If you have any questions or have additional comments I can be reached at (215)597-7915 or by FAX at (215)597-8138.

Sincerely,

Stephen D. Jarvela,
On-Scene Coordinator

ORIGINAL
(Red)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

(b) (6)
Spillman, Thomas, Battle and Klostermeyer
1200 United Center
500 Virginia Street, East
P.O. Box 273
Charleston, WV 25321-0273

Dear (b) (6) (b) (6);

The following is in response to comments received on the Shaffer project data summary. To date I have received a total of three responses to the summary (attachment 1). As promised I have included a draft Site Review Work Plan (SRWP) attachment 2. Please review this document and forward any comments to me by October 12, 1993. Upon receipt of comments I will make any appropriate changes and then schedule site activities (tentatively 10/18-29/93).

Thank you for your assistance on this project. If you have any questions or have additional comments I can be reached at (215)597-7915 or by FAX at (215)597-8138.

Sincerely,

Stephen D. Jarvela,
On-Scene Coordinator

ORIGINAL (Red)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

(b) (6)
[redacted]

1600 Laidley Tower
P.O. Box 553
Charleston, WV 25322

Dear (b) (6)
[redacted]

The following is in response to comments received on the Shaffer project data summary. To date I have received a total of three responses to the summary (attachment 1). As promised I have included a draft Site Review Work Plan (SRWP) attachment 2. Please review this document and forward any comments to me by October 12, 1993. Upon receipt of comments I will make any appropriate changes and then schedule site activities (tentatively 10/18-29/93).

Thank you for your assistance on this project. If you have any questions or have additional comments I can be reached at (215)597-7915 or by FAX at (215)597-8138.

Sincerely,

Stephen D. Jarvela,
On-Scene Coordinator

ORIGINAL (Red)

DRAFT

SITE REVIEW WORK PLAN

SHAFFER ELECTRIC COMPANY SITE
MINDEN, FAYETTE COUNTY, WV

September 20, 1993

Prepared by:

(b) (4) [redacted]

Region III - Technical Assistance Team
TDD# 9307-27 PCS# 4664
Roy F. Weston, Inc.
Delran, New Jersey

For:

Steve Jarvela, OSC
U.S. EPA Region III
Superfund Removal Branch
Philadelphia, Pennsylvania

I. INTRODUCTION

This Site Review Work Plan (SRWP) for the Shaffer Electric Company Site, Minden, Fayette County, West Virginia, has been developed by members of the United States Environmental Protection Agency (EPA) Region III Technical Assistance Team (TAT) at the request of On-Scene Coordinator (OSC) Jarvela on July 27, 1993.

TAT used the site map (Map 11) generated during the data research phase of this project as a base map for all maps submitted with this plan. For ease of handling, each of the accompanying maps has been divided into three sheets (A, B, and C). The relationship of these sheets to each other is shown in Map 10.

II. PURPOSES

The purpose of this work plan is to gather sufficient data through the inspection of site conditions and the collection of soil, sediment and water samples to:

1. Document the condition, and evaluate the integrity of the initial Fund financed removal action remedy;

2. Locate each area of analytical discrepancy, then conduct sufficient analysis to verify or refute the levels of polychlorinated biphenyl (PCB) contamination previously identified at the site;

3. Assess the need for additional barriers, such as fencing or additional soil cover;

4. Provide documentation to all interested parties of the current site conditions.

III. SITE BACKGROUND

The Shaffer Electric Company (SEC) Site is located in Minden, Fayette County, West Virginia, off Old Minden Road (Figure 1). The site is located on the United States Geological Survey (USGS) Oak Hill and Thurmond, WV 7.5 minute series topographical maps at 38 degrees, 58 minutes, 35 seconds north latitude and 81 degrees, 7 minutes, 38 seconds west longitude.

The SEC site occupies a long and relatively narrow area of approximately 5 acres which contains the Shaffer Electric Building

and a small shed. The site is approximately 1700 feet long and has a maximum width of approximately 250 feet. This relatively flat site lies in a valley surrounded by hills and slopes to the north towards Arbuckle Creek, which flows northeast. To the west, the site is bounded by a roadway separating it from several residences. To the south, the site is bounded by hills containing an abandoned mine shaft. There are several residences along the east side of the site. A gated fence is present along the northeast border of the site. On the north, on the opposite side of Arbuckle Creek, are several residences.

Approximately 175 feet west of the Shaffer Electric Building there is a drainage ditch that runs across the site, discharging into Arbuckle Creek (Map 11). Most of the precipitation from the hills southwest of the site flows through this ditch. There is possibly a natural spring located near the intake point of the ditch. There is another ditch along the south border of the site, but at this time it is not known how far this ditch extends and where the discharge point is. Because the western part of the site was subject to frequent flooding, a flood control berm has been put in place. This berm runs along the southern bank of the Arbuckle Creek, starting from the western boundary of the site and ending at a location north of the Shaffer Electric Building (Map 11). There are three bridges/culverts across Arbuckle Creek along the length of the site.

From 1970 to 1984, SEC built electrical substations for the local coal mining industry. The substations incorporated various types of transformers, capacitors, switches and voltage regulation and distribution devices. Oil containing polychlorinated biphenyls (PCBs) was used in the electrical transformers and other equipment. SEC stored non-essential, damaged, or outdated transformers and capacitors on site. Leaks from the equipment, possible spills and poor dumping practices appear to be responsible for the PCB contamination.

The West Virginia Department of Natural Resources (WVDNR) inspected the site in 1984 and found several hundred transformers and capacitors on site. Analysis of site soil and sediment samples indicated elevated levels of PCBs on site. At the request of the WVDNR, the U.S. Environmental Protection Agency (EPA) investigated the site and subsequently performed two removal actions. The first removal action was performed from December 1984 through December 1987, and the second one was performed from November 1990 through January 1991.

No individual resident utilizes well water; Minden's water supply

comes entirely from Rock Lick Spring. A spring adjacent to the Post Office Building may have been used by some residents as a source of drinking water in the past. Water from both Rock Lick Spring (before treatment) and the spring adjacent to the Post Office were tested and no PCBs were detected. Minden Mine Water Supply provides water to the town of Oak Hill from a source located due east of the site. Analysis of this water also indicated no PCB contamination. All other immediate surrounding water supplies are located well away from the migration route of the PCB materials.

IV. OBJECTIVES

The work plan consists of three major tasks which will be performed concurrently:

1. TOPOGRAPHICAL SURVEY - The objective of this task is to provide an accurate map of the site upon which to document all findings. This survey will establish the sampling grid baseline for field reference documenting the location of each sampling point. This survey will provide a topographic map for the evaluation of surface drainage patterns and erosion potential. This survey will locate target sampling areas based on the historical data review memo dated June 16, 1993.

2. EROSION SURVEY - The objective of this task is to determine the susceptibility of the site to surface erosion. This survey will inspect the evidences of ongoing and past erosion, with specific attention given to areas of past excavation and backfill. This task will also include the evaluation of current drainage patterns, and the assessment of potential erosion from future storm events and recommendations, if necessary, of preventive measures to control or minimize the threat of erosion to insure the integrity of the site remedy.

3. SAMPLING PLAN - This task is to develop and implement a reproducible grid sampling plan. The plan will clearly define sample media, location, sampling procedures, analytical methods and detection limits, data quality assurance and quality control (QA/QC) procedures, field screening methods, and procedures for split sampling.

V. SITE HEALTH AND SAFETY PLAN

A Site Health and Safety Plan (SHSP) will be prepared by TAT for all work to be performed on site. The SHSP will be implemented as

applicable to the various activities on site. All personnel working on site must be trained in accordance with 29 CFR 1910.120. All personnel must read, understand, and sign the SHSP before working in the potentially contaminated areas on site and follow the SHSP. Site Health and Safety Officer will be responsible for implementation of the SHSP. Additional details on personnel requirements are presented in the SHSP.

VI. SITE HAZARDS

The primary potential chemical hazards for site activities are the presence of airborne particles and contaminated surface soil that may contain PCBs. The physical, chemical, and toxicity characteristics of PCBs are described in the SHSP. The physical hazards on site are common construction hazards, with the primary hazards being falls, tripping and extreme weather conditions.

VII. PERSONNEL PROTECTIVE EQUIPMENT

Inhalation, ingestion and dermal contact are the major routes of exposure. It is anticipated that soil disturbance will be minimal during the site activities covered under this work plan. Modified level D will be appropriate for the site activities. This includes Saranex, booties, surgical and rubber gloves, safety boots, safety glasses, and hard hat. In addition, during field testing of the samples, face shields and bib-type aprons that cover boot tops will be worn. In case any site operation generates dust, air monitoring will be conducted to measure dust content, and, if necessary, the level of protection will be upgraded. The decision for changing the level of protection will be made by the Site Health and Safety Officer.

VIII. OPERATIONAL PROCEDURES

A. BASELINE SET UP

At the beginning of the site work, the baseline "AGR" (Map 12) will be established on site. Point "G" on baseline "AGR" will be established 5 feet southeast of the southernmost corner of the Shaffer Electric Building. The distance will be measured along the west-wall line of the building. A 600-foot line will be plotted westward connecting "G" with the southernmost edge of the utility pole near the western boundary of the site. The western end of this line will be point "A". A

1100-foot line will be plotted eastward from "G" at 55 degrees east of the north line. The eastern end of this line will be point "R". Distances will be measured at increments of 100 feet in each direction from "G", and each location will be identified with the appropriate letters (Map 12). A steel monument will be driven into the ground at points "A", "G" and "R" for use as a future reference. This baseline will be referenced in all future sampling, site gridding, and other site activities.

B. TOPOGRAPHICAL SURVEY

To find the drainage pattern and surface flow direction, a good topographical site map is essential. The site is relatively flat and at present there is no topographical map available for the site. Therefore, a topographical survey will be necessary for the site. Two separate grid sections will be established on site using lines AG and GR as base lines. A 25-foot grid will be established north and south of the baseline. To cover the whole site, at point G, additional grid lines will be drawn, referencing both parts of the base line. Using the grid set-up, a grid map will be generated. Each grid point will be marked on the ground with a survey flag and a given unique location number. After establishing grid points on site, the elevation at each grid point will be determined using a transit and survey rod. In addition to the grid points, the elevation at all subsurface soil locations will be determined. All grid locations and their corresponding elevations will be recorded in the field log book. If any bench mark is available, the elevations will be converted to the true elevation above the mean sea level, otherwise, relative elevations will be calculated. Then the locations and their respective elevations will be entered into a computer for generating a grid map and a site contour map.

On the basis of the site contour map, the site drainage pattern and surface water flow direction will be determined.

C. EROSION SURVEY

The erosion survey will begin with a thorough inspection of the entire site as identified on the site map (Map 11). Observations of recent and past erosion will be recorded on the new base map. Both on-site and off-site drainage patterns as well as the condition of on-site vegetation will be noted for future reference. Based on the site inspection and the new topographic map, a report evaluating current conditions

will be prepared. If corrective actions are indicated, the report will include an options analysis and recommendation for EPA consideration.

D. SAMPLING

Surface and subsurface soil, sediment, groundwater, surface water, and rinsate samples will be collected from the site and tested according to the approved sampling plan (Attachment 2). The Quality Assurance (QA) Level appropriate for this site is QA Level II. All soil and sediment samples will be tested on site using Ensys PCB testing kits. At least 10 percent of the soil and sediment samples will be sent to an outside laboratory for confirmation analysis as required under QA Level II. The water and rinsate samples will also be sent to the outside laboratory. Concerned Citizens to Save the Fayette County (CCSFC) will be provided with splits of those soil and sediment samples to be sent for laboratory analysis. The split samples will be sent to an independent laboratory for analysis.

E. GROUNDWATER SURVEY

During subsurface soil sample collection, if the split spoon hits groundwater, a piece of perforated pipe will be inserted into the hole. After the water level stabilizes, the level of groundwater will be measured and recorded in the log book. No groundwater level will be measured if the split spoon does not hit the groundwater. Using the data from the topographic survey, the relative depth of water will be measured. The data will then be entered into a computer and a groundwater contour map for the site will be generated. With the help of this map, the direction of groundwater flow will be determined.

F. BRUSH AND DEBRIS CLEANING

Before starting the topographic survey and sampling activities, brush and debris from the grid and sampling locations will be cleared using hand (manual and power) tools. Brush and debris will be cleared to the extent necessary to perform the topographic survey and sampling. All brush and debris will be left on site. Tools used will not be placed directly on the ground, but on a plastic sheet. Any tool which directly contacts disturbed soils will be decontaminated as described in the decontamination section of this plan.

G. DECONTAMINATION

All tools and equipment that will not come in contact with the soil will be decontaminated using dry techniques. The equipment that will come in contact with the soil will be decontaminated with Alconox and water, rinsed with distilled water, and dried. The equipment will be visually inspected to ensure that all soil particles have been removed. All disposable equipment and decontamination water generated will be collected and disposed of properly. Distilled water will be used to rinse a unit of decontaminated equipment once during the site activities. The rinsate will be collected and analyzed for total PCBs using U.S. EPA Method 608.

Decontamination procedures for personal protective equipment (PPE) are designed to minimize risk of exposure of personnel to hazardous substances. Decontamination will be performed in accordance with the SHSP. The emergency decontamination guidelines are given in the SHSP.

IX. REPORTS

Information gathered from the site review will be compiled in a Site Review Report. The report will include the following:

1. A topographical map of the site.

2. A discussion of the past and ongoing erosion on site and recommendations for any erosion control. If any erosion control measure is recommended, a detailed erosion control plan will be provided in this report.

3. An extent of contamination study which will include the PCB concentration data collected during the re-assessment including the data collection methods, map of sample locations, data summary tables, contour maps showing PCB concentration on surface and subsurface soils and sediments, and estimated volume of contaminated soil on site.

4. A groundwater contour map showing the groundwater flow direction.

5. A fencing options analysis plan for the site.

X. IMPLEMENTATION SCHEDULE

The proposed schedule for this SRWP is presented in Table 1. The implementation of this schedule will depend on various factors: timely receiving of comments from all concerned, receiving of analytical results, weather conditions, etc. Because of these factors, the actual schedule may differ from the proposed schedule.

EPA and TAT personnel will implement the work plan, and representatives of CCSFC will participate as observers. Representatives of the local soil conservation district and State of West Virginia Department of Environmental Protection will also be asked to participate.

Attachments:

1. Site Map (Map 11)
2. Index Map (Map 10)
3. Site Location Map (Figure 1)
4. Site Sampling Plan
5. Sample Location Map (Map 12)
6. Implementation Schedule (Table 1)

LEGEND

- POLE
- BASELINE POINTS
- SAMPLING POINTS
- SAMPLING GRID
- PROPERTY LINES
- BASELINE
- EXCAVATION AREAS
- BERM
- INDUSTRIAL BLDGS
- RESIDENTIAL BLDGS
- 6" EXCAVATION
- 1' EXCAVATION
- 1.5' EXCAVATION
- 2' EXCAVATION
- 3' EXCAVATION

SCALE

0 5 10 15 20 25 30

NOTE:
WHERE TWO HATCH PATTERNS ARE COMBINED, THE DEPTH OF EXCAVATION EQUALS THE SUM OF THE DEPTH REPRESENTED BY EACH PATTERN.

SECTION B

AREA II

SECTION B

SECTION A

319

318

AREA I

ARBUCKLE CREEK

SHAFFER PROPERTY

BERWIND PROPERTY

C&O R W

AREA VIII

308

304

302

300

U.S. ENVIRONMENTAL PROTECTION AGENCY
TECHNICAL ASSISTANCE TEAM — REGION III

WESTON MAJOR PROGRAMS DIVISION

DEHAN NEW JERSEY

CHECKED (b) (4)

DES. ENG.

SITE LEAD

OSC STEVE JARVELA

DATE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY EPA

SHAFFER ELECTRIC CO. SITE

SITE MAP

MAP # 11

SHEET # A

DRAWN (b) (4)

DATE 6/30/93

SCALE 1" = 40'

PCS # 4864

BATH HOUSE

SECTION D

SECTION C

AREA V

AREA IV

ARBUCKLE CREEK

AREA III

AREA VII

SHED

SECTION C

ON B

DITCH

CONCRETE PAD

SCALE

CONCRETE PAD

GATE

DITCH

MINE MOUTH

BORROW AREA

FENCE

AREA VI

NOTE:
WHERE TWO HATCH PATTERNS ARE COMBINED, THE DEPTH OF EXCAVATION EQUALS THE SUM OF THE DEPTH REPRESENTED BY EACH PATTERN.

LEGEND

- POLE
- BASELINE POINTS
- SAMPLING POINTS
- SAMPLING GRID
- PROPERTY LINES
- BASELINE
- EXCAVATION AREAS
- BERM
- INDUSTRIAL BLDGS
- RESIDENTIAL BLDGS
- 6" EXCAVATION
- 1' EXCAVATION
- 1.5' EXCAVATION
- 2' EXCAVATION
- 3' EXCAVATION

SCALE
0 5 10 15 20 25 30

U.S. ENVIRONMENTAL PROTECTION AGENCY
TECHNICAL ASSISTANCE TEAM – REGION III
WESTON MAJOR PROGRAMS DIVISION
DELRAN NEW JERSEY

CHECKED
DES. ENG
SITE LEAD
OSC STEVE JARVELA
(b) (4)
DATE

SHAFFER ELECTRIC CO. SITE
SITE MAP
MAP # 11
SHEET # B
DRAWN (b) (4)
DATE 6/30/93
SCALE 1" = 40'
PCS # 4684

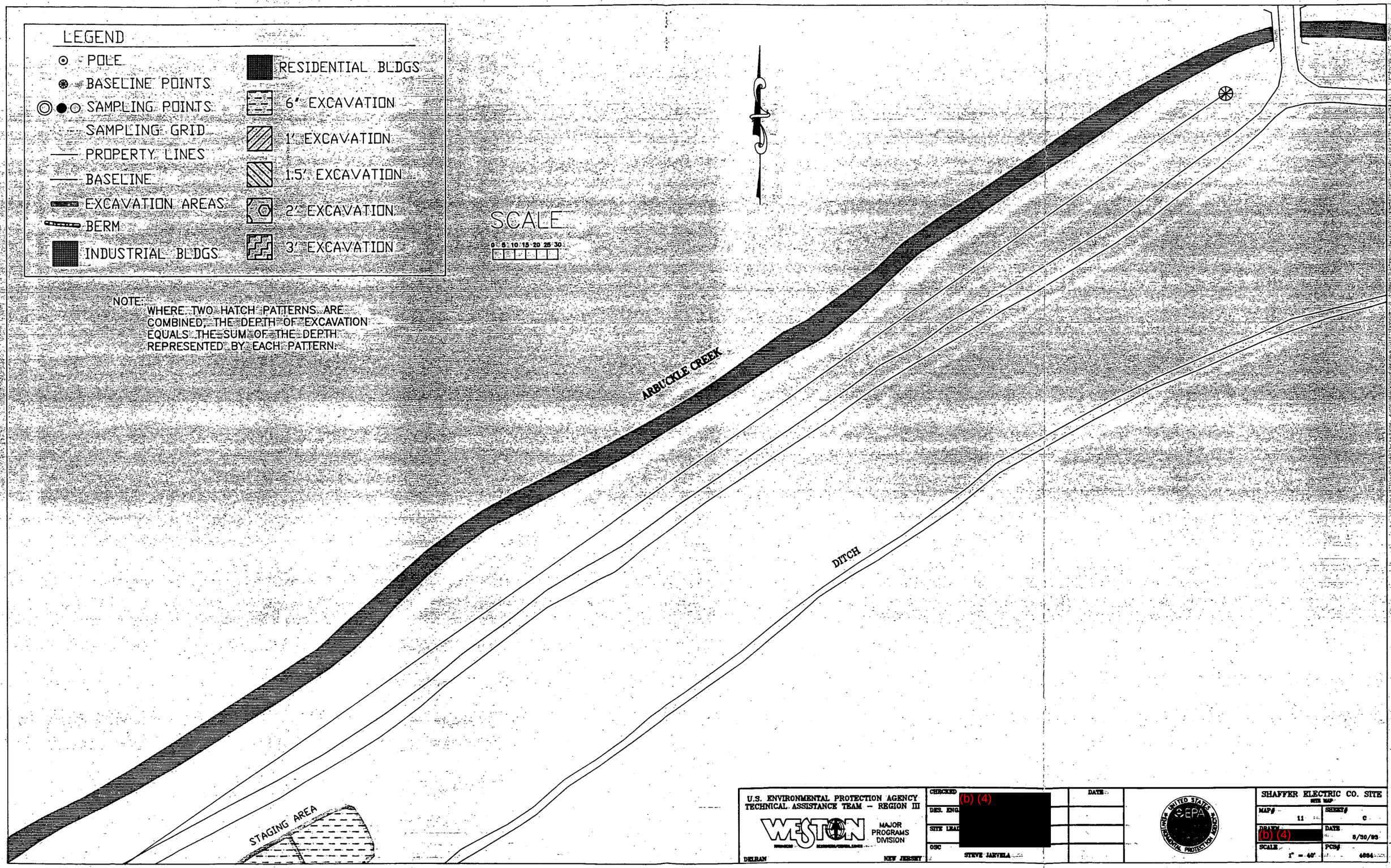
LEGEND

- POLE
- BASELINE POINTS
- SAMPLING POINTS
- SAMPLING GRID
- PROPERTY LINES
- BASELINE
- EXCAVATION AREAS
- BERM
- INDUSTRIAL BLDGS
- RESIDENTIAL BLDGS
- 6' EXCAVATION
- 1' EXCAVATION
- 1.5' EXCAVATION
- 2' EXCAVATION
- 3' EXCAVATION

SCALE

0 5 10 15 20 25 30

NOTE:
WHERE TWO HATCH PATTERNS ARE COMBINED, THE DEPTH OF EXCAVATION EQUALS THE SUM OF THE DEPTH REPRESENTED BY EACH PATTERN.



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TECHNICAL ASSISTANCE TEAM – REGION III
WESTON MAJOR PROGRAMS DIVISION
DELRAN NEW JERSEY

CHECKED (b) (4)
DES. ENG.
SITE LEAD
OSC STEVE JARVELA
DATE

SHAFFER ELECTRIC CO. SITE
SITE MAP

MAP # 11
SHEET # C
DRAWN (b) (4)
DATE 8/30/93
SCALE 1" = 40'
PCS # 4884

ORIGIN
(Red)

SHEET #A

SHEET #B

SHEET #C

BATH HOUSE

SHAFFER ELECTRIC BUILDING

319

318

308

302

300

304

U.S. ENVIRONMENTAL PROTECTION AGENCY
TECHNICAL ASSISTANCE TEAM – REGION III

WESTON MAJOR PROGRAMS DIVISION

DELRAN NEW JERSEY

CHECKED (b) (4)

DATE

DIR. ESD.

SITE LEAD

QCC STEVE JARVELA

SEPA

SHAFFER ELECTRIC CO. SITE
INDEX MAP

(b) (4)

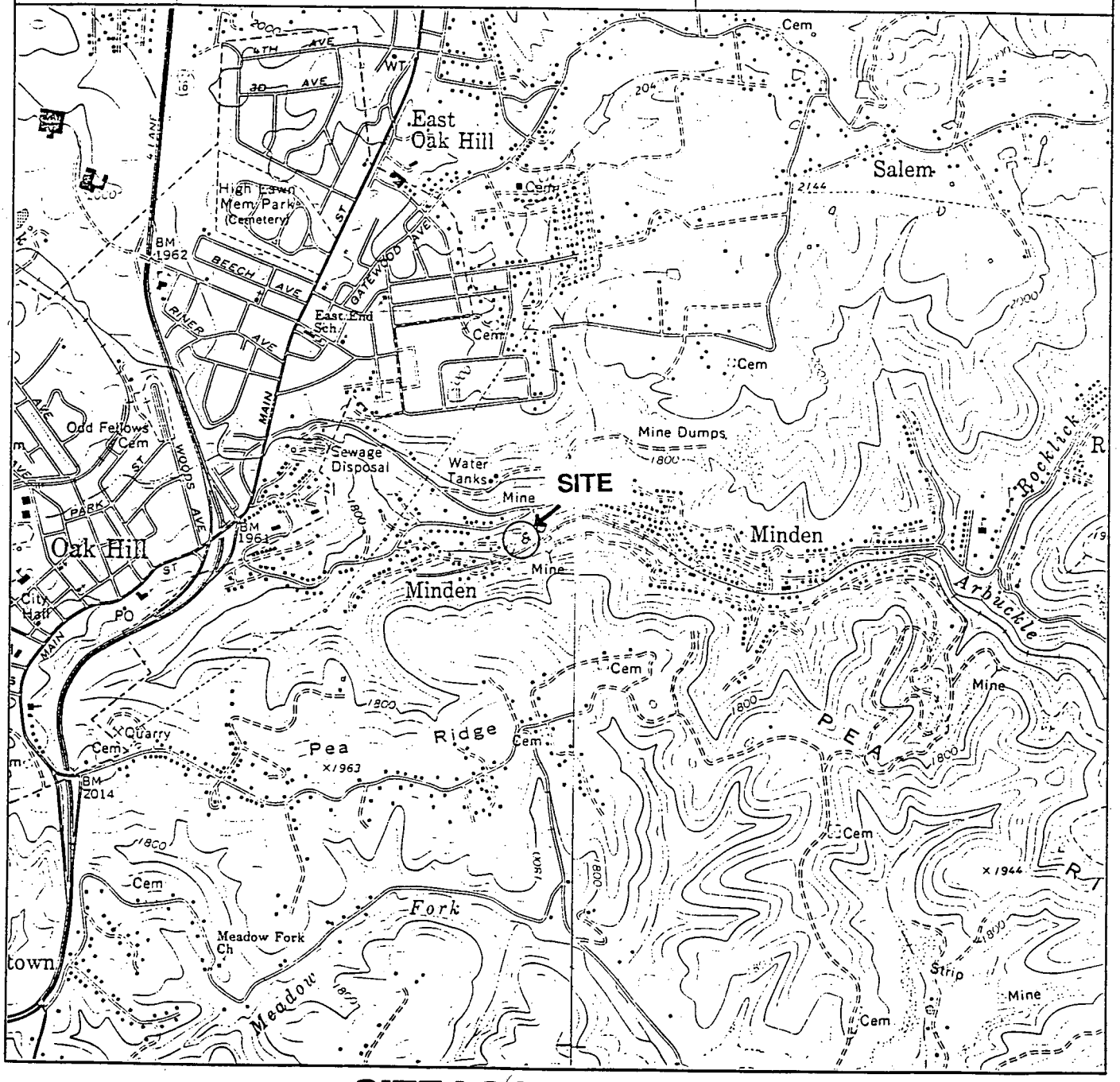
ORIGINAL (Red)

FIGURE - 1

EPA REGION III EMERGENCY RESPONSE TEAM

WESTON MAJOR PROGRAMS DIVISION

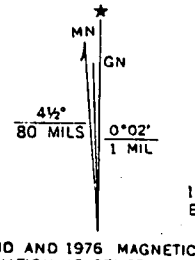
TDD Number : 9307-27
PCS Number : 4664



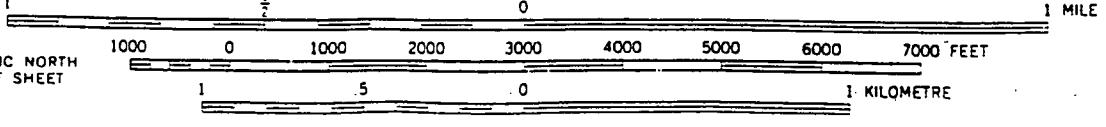
SITE LOCATION MAP

SHAFFER ELECTRIC COMPANY SITE
MINDEN, FAYETTE COUNTY, WEST VIRGINIA

USGS 7.5 MINUTE OAK HILL AND THURMOND, WV QUADRANGLE
SCALE 1:24 000



UTM GRID AND 1976 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET



QUADRANGLE LOCATION

ORIGINAL (Red)

SAMPLING PLAN

SHAFFER ELECTRIC COMPANY SITE

MINDEN, FAYETTE COUNTY, WEST VIRGINIA

September 20, 1993

Prepared by:

(b) (4) [redacted]

Region III - Technical Assistance Team
TDD# 9307-27 PCS# 4664
Roy F. Weston, Inc.
Delran, New Jersey

For:

Steve Jarvela, OSC
U.S. EPA Region III
Superfund Removal Branch
Philadelphia, Pennsylvania

(b) (4) [redacted]

TAT SITE LEAD

(b) (4) [redacted]

TAT ANALYTICAL COORDINATOR

(1) PROJECT DESCRIPTION

A. BACKGROUND

The Shaffer Electric Company (SEC) Site is located in Minden, Fayette County, West Virginia, off Old Minden Road. The SEC site occupies a long and relatively narrow area of approximately 5 acres which contains the Shaffer Electric Building and a small shed. This relatively flat site lies in a valley surrounded by hills and slopes to the north towards Arbuckle Creek, which flows northeast. To the west, the site is bounded by a roadway separating it from several residences. To the south, the site is bounded by hills containing an abandoned mine shaft. There are several residences along the east side of the site. A gated fence is present along the northeast border of the site. On the north, on the opposite side of Arbuckle Creek, are several residences.

Approximately 175 feet west of the Shaffer Electric Building there is a drainage ditch that runs across the site, discharging into the Arbuckle Creek (Map 11). Most of the precipitation from the hills southwest of the site flows through this ditch. There is another ditch along the south border of the site, but at this time it is not known how far this ditch extends and where the ditch discharges. A flood control berm runs along the southern bank of the Arbuckle Creek starting from the western boundary of the site and ending at a location north of the Shaffer Electric Building.

From 1970 to 1984, SEC built electrical substations for the local coal mining industry. The substations incorporated various types of transformers, capacitors, switches and voltage regulation and distribution devices. Oil containing polychlorinated biphenyls (PCBs) was used in the electrical transformers and other equipment. SEC stored non-essential, damaged, or outdated transformers and capacitors on site. Leaks from the equipment, possible spills and poor dumping practices appear to be responsible for the PCB contamination.

The West Virginia Department of Natural Resources (WVDNR) inspected the site in 1984 and found several hundred transformers and capacitors on site. Analysis of site soil and sediment samples indicated elevated levels of PCBs on site. At the request of the WVDNR, the U.S. Environmental Protection Agency (EPA) investigated the site and subsequently performed two removal actions. The first removal action was performed from December 1984 through December 1987, and the second one was performed from November 1990 through January 1991.

On June 16, 1993, the U.S. EPA Technical Assistance Team (TAT) performed a data search regarding PCBs at the site. TAT summarized all previous analytical results and produced scaled site maps showing all previous site activities, including sampling and excavation locations.

B. OBJECTIVE

The objective of this sampling plan is to obtain data representing the extent of PCB levels in surface and subsurface soil, sediment, surface water and groundwater on site and in Arbuckle Creek adjacent to the site and to draw a reproducible grid sampling map of the site for future use. The other objective of this plan is to collect soil samples from residential property in the floodway of Arbuckle Creek to determine if any PCB contamination has migrated via flood water. This plan will clearly identify sample media, sampling procedures, analytical methods and detection limits, data quality assurance and quality control (QA/QC) procedures, field screening methods and procedures for split sampling.

C. SCOPE

This sampling plan includes sampling of surface and subsurface soil, and of sediment, surface water and groundwater throughout the site and from the adjacent Arbuckle Creek. This plan focusses on PCB contamination for the purposes outlined in the Site Review Work Plan (SRWP).

A total of 176 samples will be collected from the site as follows:

Surface soil samples collected from the top 6 inches of soil (115 samples including 1 duplicate, 1 background, and 9 off-site samples). The sample numbers are prefixed with "S".

Two subsurface soil samples collected at depths between 18 inches and 24 inches, and between 30 inches and 36 inches (10 samples at each depth for a total of 20). The sample numbers are prefixed with "SC2" for 18-24 inches depth and "SC3" for 30-36 inches depth.

Sediment samples from the adjacent Arbuckle Creek and drainage ditches on site (36 samples including 1 duplicate and 1 background sample). The sample numbers are prefixed with "SED".

Surface water samples collected from the Arbuckle Creek (2 samples: one upstream and one downstream of the ditch across the site). The sample numbers are prefixed with "SW".

A groundwater sample collected from a location downstream of the potential contaminated areas on site (1 sample). The sample number is prefixed with "GW".

Rinsate samples collected from reusable sampling equipment (2 samples). The sample numbers are prefixed with "R".

Split samples will be collected from the soil and sediment sample locations only. A total of 22 samples will be split: 14 surface soil samples including the background and the duplicate samples; 2 subsurface soil samples and 6 sediment samples including the background and duplicate samples. The soil samples also include 1 off-site sample. No water or rinsate sample will be split.

TAT used the site map generated during the data search as a base map for this sampling plan (Map 11). For the convenience of describing different areas, the site was divided into four sections, Section A, B, C and D. It may be mentioned here that, while drawing the above site map during the data research, TAT had to make several assumptions because of the unavailability of sufficient records. Also, during earlier removals, areas with PCB levels of less than 50 parts per million (ppm) were considered clean.

A new baseline, "AGR", has been established on the site map for all future references. Sample grid lines have been drawn perpendicular to the baseline at a 100-foot interval. In map sections C and D, grid lines at a distance of 50 feet and 100 feet have been drawn south of the baseline. For ease of handling, each of the accompanying maps has been divided into three sheets (A, B, and C). The relationship of these sheets to each other is shown in Map 10.

While developing this sampling plan, the following considerations have been given:

Any location with 10 ppm or more of PCBs has been considered for sampling.

Most of the grid points along the Arbuckle Creek and south of the site have been considered for soil sampling. Soil sample points on the 50-foot and 100-foot grid lines have been considered alternately east of grid line M. Several grid

points along the south side of the site in site sections C and D have not been considered for sampling because they are either at a higher elevation than the site and/or there is no history of PCB contamination at those locations.

Several soil sample locations along the west, south and east boundary of the Shaffer property have been considered for sampling, aiming at reduction of future fence length. Four soil sample locations have been considered from around SED-23 because the area is subject to periodic flooding from the ditch water.

Considering the general pattern of contamination above 10 ppm outside the south and east boundaries of Excavation Area II, sample locations 50-foot apart at a distance of 5 and 25 feet from the edge of excavation have been considered. A total of 5 sampling points have been considered from around Excavation Area III: 2 from the roadway separating Area III and Area IV and 1 from behind the shed and 2 other from the bank of the Arbuckle Creek. Also, 5 locations have been considered from around Excavation Area VII.

Considering the previous history of site contamination, 5 locations within a 20-foot grid area have been considered from the S-09, S-50 and S-55 areas; 4 locations from the S-18 and S-85 areas; and 3 locations from S-20, S-105 and S-142 areas.

A total of 10 subsurface soil sample locations have been considered: 3 from the southwest part of the site at 200 feet apart, 3 along Arbuckle Creek around the main excavation areas, 2 from the area immediate east of the Shaffer Electric Building, and 1 each from southwest and northeast of Excavation Area VII.

Sediment sample locations in Arbuckle Creek have been considered every 100 feet from grid lines E through K and every 200 feet thereafter. No sediment location has been considered upstream of grid line E because of the presence of a berm and because there is no history of PCB contamination in that part of the creek.

Sediment sampling points have been considered at every 300 feet eastward starting from grid line G in the ditch south of the Shaffer Electric Building. One sediment location (SED-43) upstream of the ditch across the site has been considered for sampling.

For each sediment location with a history of PCB contamination at 10 ppm or higher, in addition to the location itself, two other locations, one 10 feet upstream and one 10 feet downstream, have been considered for sampling.

Four additional sample locations, S-28, S-36, S-81 and S-97, have been considered at the request of the Concerned Citizens to Save the Fayette County (CCSFC).

There are approximately 59 residences in the floodway of Arbuckle Creek. A total of 9 surface soil samples (approximately 15 percent of the residences), 5 from north and 4 from south of Arbuckle Creek, will be collected. The samples will be collected from yard areas close to Arbuckle Creek. The exact location of the samples will be determined during sampling. The samples will be numbered S-168 through S-176.

A duplicate soil sample will be collected at location S-74 and will be marked as S-165. A duplicate sediment sample will be collected at location SED-58 and will be marked as SED-164.

All sample locations except the off-site ones are tentatively identified on the attached sample location map (Map 12). Actual sample locations may vary from those on Map 12. Corrections or adjustments will be made in the field on the basis of conditions as outlined in Section 1E of this plan.

As required by Quality Assurance (QA) Level II Quality Control (QC) criteria, a minimum of 10 percent of the soil/sediment samples will be sent to a laboratory for confirmation analysis for PCBs. The sample locations will be selected at random including 1 from off-site. A total of 27 samples, which include 16 soil and 6 sediment, 3 water and 2 rinsate samples, will be sent out for analysis. The soil and sediment samples for laboratory analysis will be split with CCSFC.

Based on site conditions and/or field observations and testing, the OSC may require additional samples to be taken. Each new sample point will be surveyed, recorded in the log book and identified on the sample location map.

D. DATE USAGE

Utilizing the data generated by these sampling activities, a grid sampling map will be produced to assess the current site condition. The data will help EPA to evaluate the need for additional barriers (fencing or soil covering) on site. The data will also help in evaluating the need for drainage/erosion control measures on site. With the off-site sample data, EPA will determine if any PCB contamination has migrated off site.

E. MONITORING NETWORK DESIGN AND RATIONALE

Sampling at the Shaffer Electric Company Site will be performed as efficiently as possible to obtain quality data representing the degree of contamination at different sections of the site.

From the sample location map (Map 12), locations of all sampling points with reference to the base line "AGR" will be calculated using a computer. Following the procedures outlined in the SRWP, the baseline "AGR" will be established on site with the help of survey equipment. All sampling points will be marked on the ground using survey flags and with the appropriate sample numbers. If any sample location is not identified correctly or if the site map does not match with the actual site, the necessary corrections will be made, and the site map and the sample location map will be modified accordingly. All changes will be recorded in the log book.

All soil, sediment, and water samples will be collected according to the Office of Solid Waste and Emergency Response (OSWER) directives as follows:

a) Soil Sample Collection

All soil samples will be collected following OSWER Directive 9360.4-02, Standard Operating Procedure (SOP) #2012. Surface soil samples will be collected at a depth of 0 to 6 inches using dedicated, precleaned sampling scoops. Subsurface soil samples will be collected using split spoons from depths between 18 inches to 24 inches and 30 inches to 36 inches. Before collecting samples, the top layer of soil and debris will be carefully removed from the sample location. A sufficient quantity of sample for the analytical method will be collected at the specified depths for each sample location. After collection, the sample will be placed in a precleaned stainless steel or aluminum homogenization container and mixed thoroughly to obtain a homogenous sample. The sample will

then be transferred into a precleaned 8-ounce sampling jar and tightly secured with a cap. The sample number will be marked outside the jar. Unless otherwise specified, one 8-ounce sample will be collected at each location, at each depth. The sample number, location, name of the sampler, and the date and time of sampling will be recorded in the log book.

b) Sediment Sample Collection

Sediment samples will be collected following OSWER Directive 9360.4-03, SOP #2016. A precleaned hand auger will be used for collecting underwater samples, and dedicated sampling scoops will be used to collect samples from dry ditch areas. If using sampling scoops, the debris from the soil surface will be carefully cleared prior to sample collection. The collected sample will be placed in a precleaned homogenization container. When using the hand auger, the auger will be inserted into the sediment at an angle of 0 to 45 degrees from the vertical and rotated once or twice to cut a core of the sediment, then slowly withdrawn. The sediment will then be placed in a precleaned homogenization container and mixed thoroughly to make it homogenous. The sample will then be transferred into a precleaned 8-ounce sampling jar and tightly secured with a cap; the sample number will be marked outside the jar. Water will be decanted off the sediment samples, as far as possible, before transferring them into sampling jars. Unless otherwise specified, one 8-ounce sample will be collected at each location. The sample number, location, name of the sampler, and the date and time of sampling will be recorded in the log book.

c) Surface Water Sample Collection

Surface water will be collected following OSWER Directive 9360.4-03, SOP #2013. Samples will be collected using "direct method" as described in the SOP. Two 1-liter amber bottles of water will be collected at each location. A precleaned sample bottle will be dipped under the water surface, pointing upstream. The sample collector will be downstream of the sampling container. Proper care will be taken to avoid surface debris. After the sample has been collected, the cap of the bottle will be tightly secured and the sample number will be marked outside the bottle. The sample number, location, name of the sampler, and the date and time of sampling will be recorded in the log book. One double volume of water will be collected at one location for QA/QC.

d) Groundwater Sample Collection

Groundwater will be collected following OSWER Directive 9360.4-03, SOP #2007. As discussed in the SRWP, if the split spoon hits groundwater during subsurface soil sampling, a piece of perforated pipe will be inserted into the hole to form a well. Before starting the sampling activity, plastic sheets will be placed around the well to avoid contact between the sampling equipment and the ground. After the water level stabilizes, the depth of the water column will be measured using a water level indicator, and the volume of water in the well will be calculated. Then the well will be purged three well volumes or to dryness using a precleaned bailor. After the well recharges, a total of two 1-liter amber bottles of water will be collected using a bailor. The caps of the bottles will be secured tightly, and the sample number will be marked on the outside of the bottles. The sample number, location, name of the sampler, and the date and time of sampling will be recorded in the log book. The purged water will be collected and disposed of properly.

e) Rinsate Blank Collection

One rinsate blank each will be collected from the split spoon and the hand auger to meet the QA Level II objectives. After decontaminating the sampling equipment as described in Section 3B of this plan, the equipment will be again rinsed with distilled water. Two 1-liter amber bottles of rinsate will be collected per equipment. The caps of the bottles will be secured tightly and the sample number will be marked on the outside of the bottles. The sample number, name of the sampler, name of the equipment, and date and time of sampling will be recorded in the log book.

e) Split Sample Collection

The soil and sediment samples that will be split with the CCSFC will be divided following OSWER Directive 9360.4-10, Section 4.6. After collection and homogenization of samples in a homogenization container, two 8-ounce jars will be filled simultaneously with alternate scoopfuls of samples. The caps of the jars will be secured tightly and both the jars will be marked on the outside with the same sample number. The sample number, location, name of the sampler, and the date and time of sampling will be recorded in the log book.

f) Duplicate Sample Collection

Field duplicate samples will be collected from the preselected locations using the same method as for split samples. The caps of both the 8-ounce jars will be secured tightly. Each of the bottles will be marked with its unique sample number. The sample number, location, name of the sampler, and the date and time of sampling will be recorded in the log book.

g) Field Testing of Samples Using Ensys PCB Test Kits

All soil and sediment samples will be tested in the field using Ensys PCB test kits following the procedures described in the user's guide. All wet samples will be dried using a microwave oven before field testing. All test results, names of the persons performing the testing, and the date of testing will be recorded in the log book

One each of the soil and sediment samples to be sent out for laboratory analysis will be marked for matrix spike/matrix spike duplicate (MS/MSD) analysis.

After completion of sampling, the sample location map (Map 12) will be modified as necessary to represent the actual sampling event.

Soil disturbance will be minimal during sampling, and modified level D personal protective equipment (PPE) will be used. This includes Saranex, booties, rubber gloves, safety boots, safety glasses, and hard hat. In addition, a face shield will be used during field testing of the samples.

F. MONITORING PARAMETERS

MATRIX	PARAMETER	TEST METHOD	DETECTION LIMIT
Soil/sediment	PCBs	ENSYS PCB Test Kit	10 mg/Kg
Soil/sediment	PCBs	EPA Method 8080	1 mg/Kg
Water	PCBs	EPA Method 608	0.02 ug/L
Rinsate	PCBs	EPA Method 608	0.02 ug/L

(2) DATA QUALITY REQUIREMENTS AND ASSESSMENTS

QA Level II QC criteria will be followed for all samples to be tested in outside laboratories. The detection limits, quantitation limits, estimated accuracy, accuracy protocol, estimated precision,

and precision protocol will be maintained within the limits of the EPA 8080 and 608 test methods. The detection limit for the water samples will be 0.02 microgram per liter (ug/L). This is the possible lowest achievable detection limits for PCBs in water according to the Quality Assurance Branch of the Central Regional Laboratory for EPA Region III in Annapolis, Maryland (Attachment 1)

(3) SAMPLING PROCEDURES

A. EQUIPMENT

1. sampling plan
2. sample location map
3. site log book
4. field data sheets
5. 8-ounce precleaned wide mouth sampling jars
6. 1-liter precleaned amber bottles
7. precleaned sampling scoops
8. split spoon
9. jack hammer
10. hand auger
11. bailor
12. perforated pvc pipe
13. nylon ropes
14. stainless steel or aluminum homogenization containers
15. sample tags
16. sample labels
17. custody seals
18. chain-of-custody forms
19. plastic zip-lock bags
20. shipping containers/coolers
21. vermiculite
22. strapping tape
23. ice
24. distilled water
25. Alconox
26. decontamination brush and bucket
27. trash bags
28. steel drums
29. survey transit
30. measuring tapes
31. wooden stakes
32. survey flags
33. survey rod
34. markers
35. spray pint cans

36. tool box
37. steel monument
38. Ensys PCB test kits
39. table
40. microwave oven
41. electrical generator
42. electrical cables
43. Saranex
44. latex gloves
45. rubber outer gloves
46. rubber booties
47. hard hat
48. safety glasses
49. ear plugs
50. face shield
51. masking tapes
52. plastic sheet
53. camera with film
54. water level indicator

B. DECONTAMINATION OF SAMPLING EQUIPMENT

Soil and sediment sampling equipment will be decontaminated to prevent cross contamination between sampling stations. All reusable sampling equipment (split spoon, hand auger, etc.) that will come in contact with the contaminated media will be decontaminated following OSWER Directive 9360.4-02, SOP #2060. The equipment will be scrubbed of visible contamination, washed with Alconox and water, rinsed with distilled water, and air dried. Decontamination of disposable equipment will not be necessary and disposables will be disposed of properly. All decontamination water will be collected and disposed of properly.

C. SAMPLE HANDLING

After each sample is collected, any visible contamination on the outside of the jar will be removed with a water and Alconox solution, and the jars will be rinsed with distilled water and dried. If there is no visible contamination, the outside surface of the sample jar will be thoroughly wiped off using paper towels.

After decontamination, proper labels will be affixed to each jar. The sampling jars will then be placed in plastic zip-lock bags and packed into a cooler with ice. At the end of each day, the coolers will be sealed with custody seals.

All soil and sediment samples will then be field tested with Ensys PCB test kits to determine the level of PCBs present. The wet samples will be dried in a microwave oven before field testing.

After the completion of field testing, the samples identified for sending to an outside laboratory for analysis, as well as the split samples for CCSFC, will be packed in appropriate shipping containers. Chain-of-custody forms will be assigned and affixed to the inside of the shipping containers. The containers will be bound with strapping tape to prevent loss of samples, then properly placarded and sealed with custody seals. The containers will be hand delivered or shipped to the laboratories for analysis for PCBs. The containers of split samples for CCSFC will be delivered to their representative, observing the proper chain-of-custody procedures. Any remaining field tested samples with PCB concentrations of 10 ppm or more will be placed into a drum. The drum will be disposed of properly.

D. QUALITY ASSURANCE / QUALITY CONTROL

QA Level II QC criteria will be followed for all samples to be tested. A minimum of 10 percent of samples tested with Ensys PCB test kits will be sent to an outside laboratory for confirmation analysis. Quality assurance for the samples to be analyzed in an outside laboratory will consist of a matrix spike and a matrix spike duplicate (MS/MSD) per matrix, surrogate spike recoveries per sample and method blanks analyzed per matrix.

Attachment:

1. Memorandum of TAT Analytical Coordinator concerning detection limits for water samples.

ORIGINAL (Red)

Sampling Plan
Shaffer Electric Company Site, Minden, WV
September 20, 1993

WESTON MANAGERS DESIGNERS CONSULTANTS
5 Underwood Court
Delran, NJ 08075
Phone: 609-461-4003
Fax: 609-461-4916

TECHNICAL ASSISTANCE TEAM FOR EMERGENCY RESPONSE REMOVAL AND PREVENTION
EPA CONTRACT 68-WO-0036

MEMORANDUM

TO: Steve Jarvela, Senior OSC, EPA Region III
Superfund Removal Branch

THRU: (b) (4), TATL, Region III TDD# 9307-27
PCS# 4664

FROM: (b) (4) TAT Region III

SUBJECT: Shaffer Electric Site PCB Detection Limits in Water

DATE: September 2, 1993

TAT contacted Greg Allen of the Quality Assurance Branch of the Central Regional Laboratory for Region III in Annapolis, MD, concerning achievable detection limits for PCBs in water. He noted that the Contract Required Quantitation Limit for the Headquarters Contract Laboratory Program (CLP) Drinking Water Methods are 200 parts per trillion for all Aroclors except 1221. He alos noted that a lower detection limit may be achieved with sample concentration and/or a 2-liter sample volume. It may be possible to detect as low as 10-20 parts per trillion. To achieve the 10-20 parts per trillion detection limit the laboratory should perform a clean-up on all surface water samples. The possible clean-up methods are florisil and/or sulfuric acid.

LEGEND

- POLE
- BASELINE POINTS
- SAMPLING POINTS
- SAMPLING GRID
- PROPERTY LINES
- BASELINE
- EXCAVATION AREAS
- BERM
- INDUSTRIAL BLDGS
- RESIDENTIAL BLDGS
- 6" EXCAVATION
- 1' EXCAVATION
- 1.5' EXCAVATION
- 2' EXCAVATION
- 3' EXCAVATION

SCALE

0 5 10 15 20 25 30

BACKGROUND SEDIMENT AND SURFACE WATER
SED-01
SW-02

BACKGROUND SOIL SAMPLE
S-03

SECTION A

SECTION B

SECTION B

AREA I

AREA II

AREA VIII

319

318

308

304

302

300

ARBUCKLE CREEK

BERWIND PROPERTY

SHAFFER PROPERTY

C&O R W

DITCH

FENCE

GATE

A

B

C

D

E

S-04
S-05
S-06
S-07
S-08
S-09
S-10
S-11
S-12
SC2-13
SC3-14
S-15
S-16
S-17
S-18
S-19
S-20
S-21
S-22
S-23
S-24
S-25
SC2-26
SC3-27
S-28
SED-29
S-30
SED-34
SED-35
S-36
SED-37
S-31
SC2-32
SC3-33
SED-38
SED-39
SED-40
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S-56
S-57
SED-58
SED-164
S-59
S-61
SC2-
SC3-
GW-6
S-70

U.S. ENVIRONMENTAL PROTECTION AGENCY
TECHNICAL ASSISTANCE TEAM — REGION III

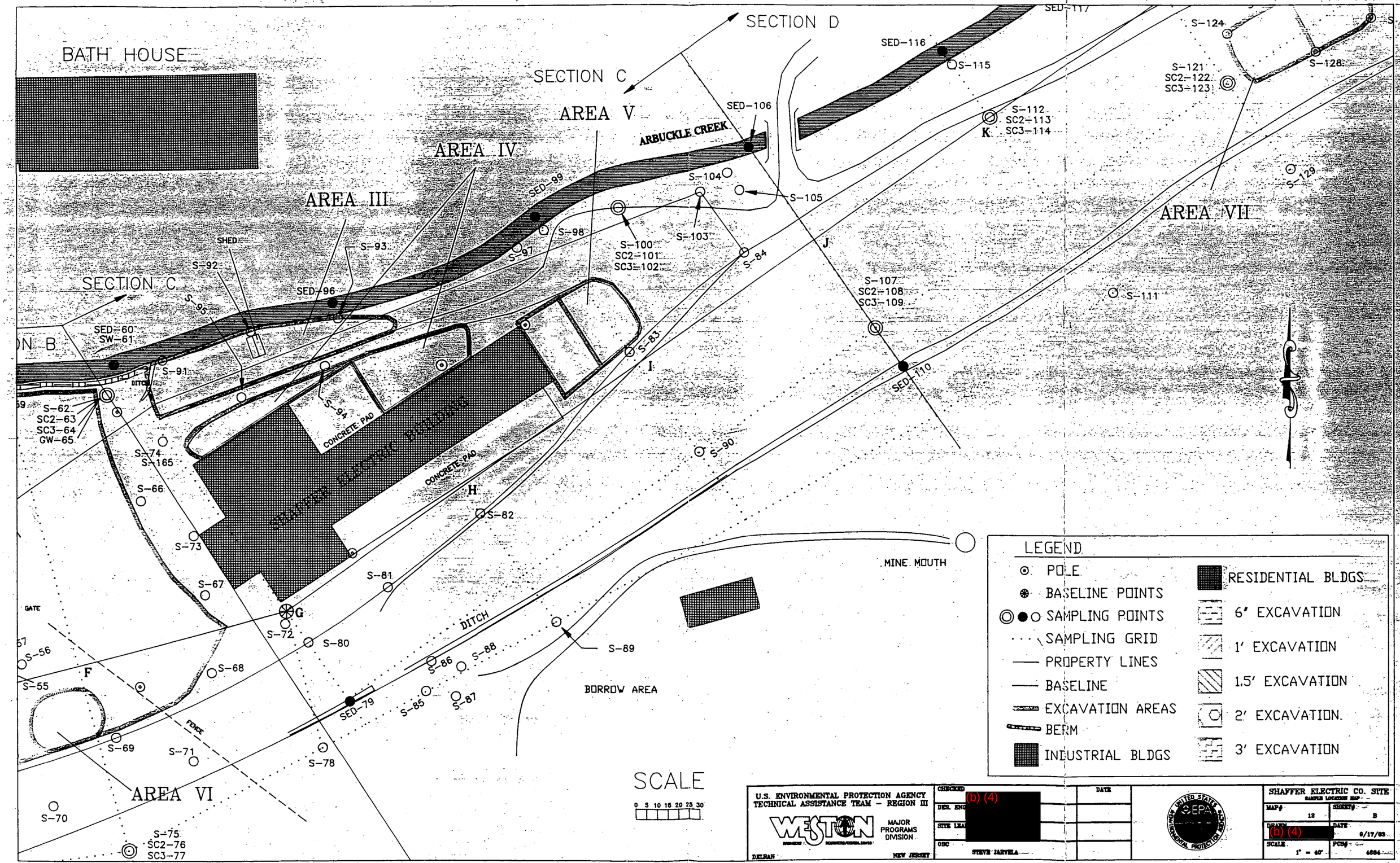
WESTON — MAJOR PROGRAMS DIVISION

DELRAN NEW JERSEY

CHECKED	(b) (4)	DATE
DES. ENG.		
SITE LEAD		
OSC	STEVE JARVELA	

SHAFFER ELECTRIC CO. SITE
SAMPLE LOCATION MAP

MAP# 12	SHEET# A
DRAWN (b) (4)	DATE 9/17/93
SCALE 1" = 40'	PCS# 4684



U.S. ENVIRONMENTAL PROTECTION AGENCY
TECHNICAL ASSISTANCE TEAM – REGION III

WESTON — MAJOR PROGRAMS DIVISION — DEKRAN — NEW JERSEY

CHECKED (b) (4)
DES. ENG
SITE LEAD
OSC STEVE JARVELA
DATE

SHAFFER ELECTRIC CO. SITE
SAMPLE LOCATION MAP

MAP# 12 | SHEET# 8
DRAWN (b) (4) | DATE 9/17/93
SCALE 1" = 40' | PCS# 4664

LEGEND

- POLE
- BASELINE POINTS
- SAMPLING POINTS
- SAMPLING GRID
- PROPERTY LINES
- BASELINE
- EXCAVATION AREAS
- BERM
- INDUSTRIAL BLDGS
- RESIDENTIAL BLDGS
- 6" EXCAVATION
- 1' EXCAVATION
- 1.5' EXCAVATION
- 2' EXCAVATION
- 3' EXCAVATION

SCALE

0 5 10 15 20 25 30

ARBUCKLE CREEK

DITCH

STAGING AREA

SED-117 SED-118 SED-119 SED-120 SED-121 SED-122 SED-123 SED-124 SED-125 SED-126 SED-127 SED-128 SED-129 SED-130 SED-131 SED-132 SED-133 SED-134 SED-135 SED-136 SED-137 SED-138 SED-139 SED-140 SED-141 SED-142 SED-143 SED-144 SED-145 SED-146 SED-147 SED-148 SED-149 SED-150 SED-151 SED-152 SED-153 SED-154 SED-155 SED-156 SED-157 SED-158 SED-159 SED-160 SED-161 SED-162 SED-163

S-120 S-124 S-125 S-126 S-127 S-131 S-132 S-135 S-140 S-141 S-142 S-143 S-144 S-145 S-146 S-147 S-152 S-153 S-154 S-155 S-156 S-157 S-159 S-162

SC2-133 SC3-134

L M N P Q R

U.S. ENVIRONMENTAL PROTECTION AGENCY TECHNICAL ASSISTANCE TEAM – REGION III	CHECKED (b) (4)	DATE	SHAFFER ELECTRIC CO. SITE
WESTON MAJOR PROGRAMS DIVISION DELRAN NJ	DES. ENG.		MAP 12 SHEET C
	SITE LEAD		DRAWN (b) (4) DATE 6/17/03
	QSC STEVE JARVELA		SCALE 1" = 60' PCS 6096

ORIGINAL (Red)

Site Review Work Plan
Shaffer Electric Company Site, Minden, WV
September 20, 1993

TABLE - 1

ESTIMATED IMPLEMENTATION SCHEDULE FOR THE SRWP

Actions	Date
1. Prepare SRWP	9-22-93
2. Distribute of SRWP to all concerned	9-25-93
3. Receive comments from all concerned	Within 2 weeks of 2
4. Finalize SRWP	Within 3 days of 3
5. Initiate SRWP	Within 2 days of 4
6. Conduct topographical survey	Within one week of 5
7. Set up sample grid	Within one week of 5
8. Implement sampling plan (sample collection, field testing, sample packaging and shipping, groundwater survey, etc.)	Within 2 weeks of 5
9. Prepare topographical map; finalize sample location map and groundwater contour map	Within 2 weeks of 8
10. Receive analytical results	Within 4 weeks of 8
11. Validate data; prepare data summary, analytical contour map	Within 2 weeks of 10
12. Prepare report and submit to OSC	Within 3 weeks of 11
13. Receive OSC comments	Within 2 weeks of 12
14. Submit final report to OSC	Within 2 weeks of 13
15. Total	Within 21 weeks of 1